

Application Serial No. 10/579,087  
 Reply to office action of November 19, 2008

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**PATENT  
Docket: CU-4808**

**Amendments To The Specification**

Replace the title of the invention with the following new title:

**-DETECTION AND REMOVAL OF NOISE FROM AN IMAGE VIA MEDIAN FILTER  
AND MEAN-VARIANCE FILTER--**

Please replace paragraph in the specification at page 4, lines 14 -18 with the following amended paragraph:

At this time, said  $\alpha$  is the minimum threshold to detect a pixel containing impulsive noise and said  $\chi_m$  is the mean of values of the pixels contained in the unit area. As above, threshold is dynamically calculated for each unit area. Thus, the noise removing system according to the present embodiment may detect impulsive noise more accurately.

Please replace the paragraphs in the specification at page 5, between lines 17-31 with the following amended paragraphs:

The second filter 103 may employ the mean-variance filter like equation 3:

[Equation 3]

$$LND(i, j) = \frac{\sigma_k^2(i, j)k(i, j) + \bar{k}^2(i, j)}{\sigma_k^2(i, j) + \bar{k}(i, j)}$$

At this time, said  $\sigma_k(i, j)$  and  $\bar{k}(i, j)$  indicate the variance and the mean of second pixels adjacent to  $k(i, j)$ , which is the coordinates of the first pixel, in the area formed of a predetermined size.

In the area of a predetermined size where there is no change, it is calculated as

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$\sigma_k(i,j)=0$ . Accordingly, equation 3 may be represented as below:

[Equation 4]

$$LND(i, j) = \bar{k}(i, j)$$

Equation 4 indicates that a pixel value of the local neighborhood is approximate to the mean in the area and that Poisson noise has been effectively removed.

In contrast to this, in the area where image data contains edge or detailed information, the mean  $\sigma_k(i,j)$  takes on a higher value. Accordingly, equation 3 may be approximated as below: